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A4B

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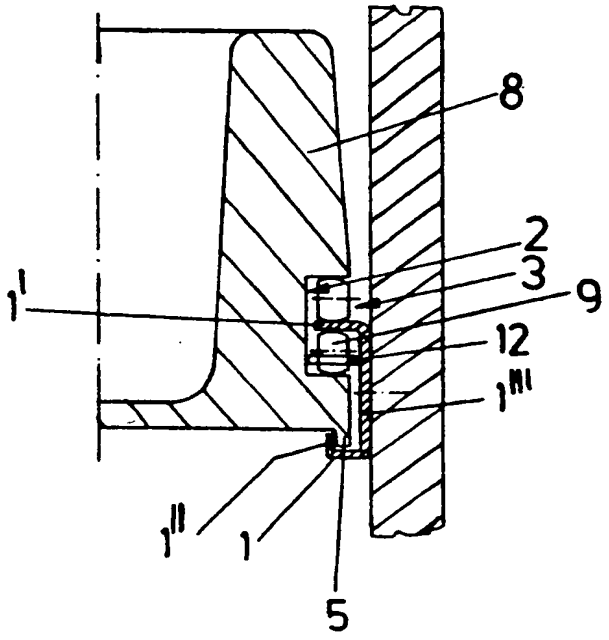
(54) Pull-out guide assembly

(57) In a pull-out guide assembly for drawers or sliding shelves, the pull-out rails (2) on the side of the drawer are guided on the support rails (1) on the side of the body by means of a runner carriage 3 whose rollers (9) run on an upper horizontal flange (1') of the support rail. Lateral guiding of the drawer is effected by the interengagement of a vertically upwardly extending flange (1'') at the lower end of the support rail and a downwardly projecting guide flange (5) on the drawer side wall or the pull-out rail.

Fig. 3



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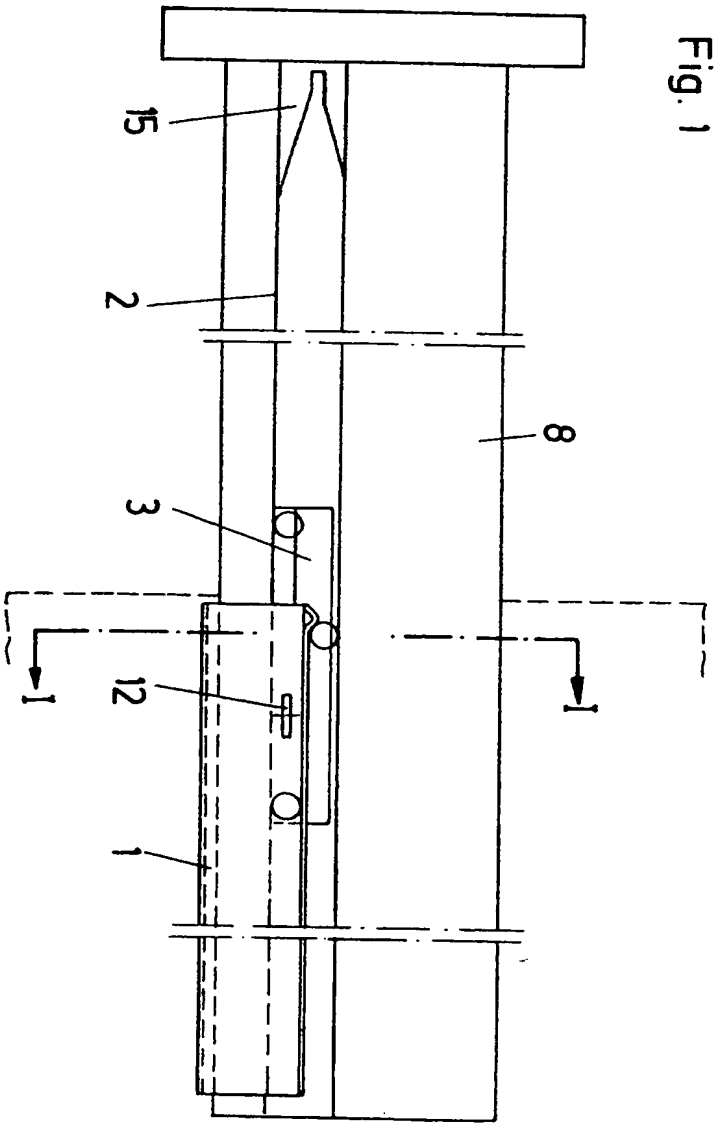

Fig. 1

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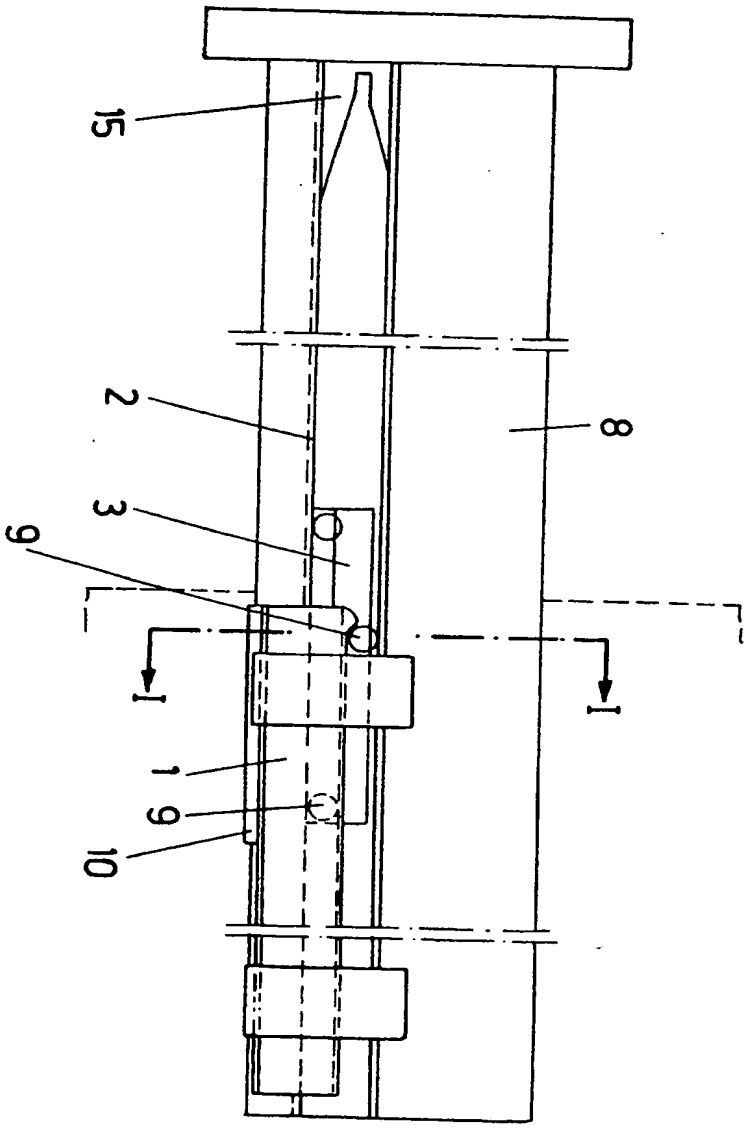

Fig. 2

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Fig. 3

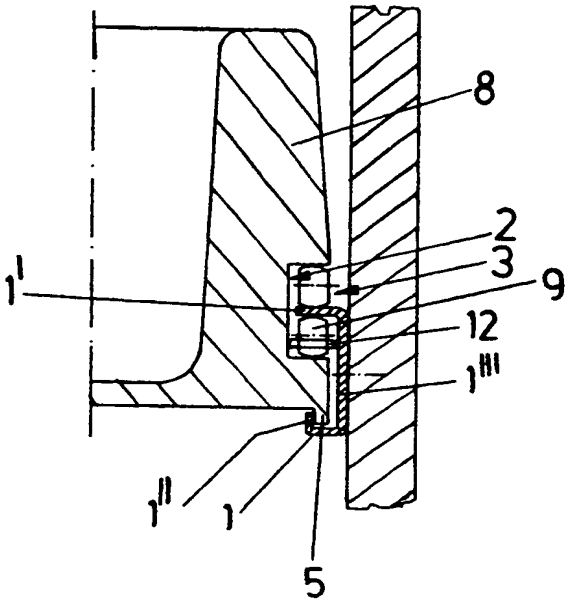

Fig. 4

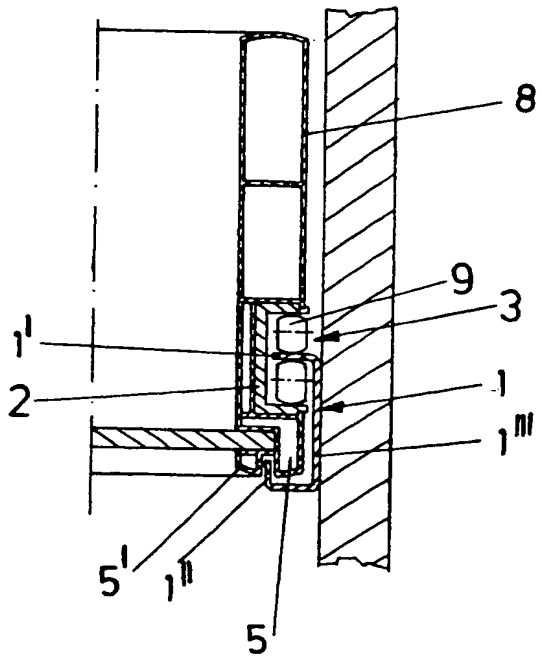

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Fig. 5

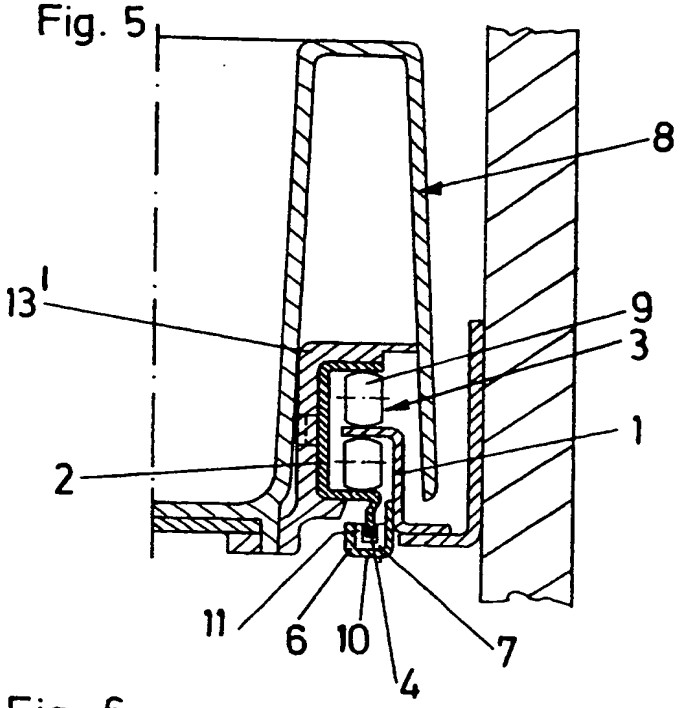
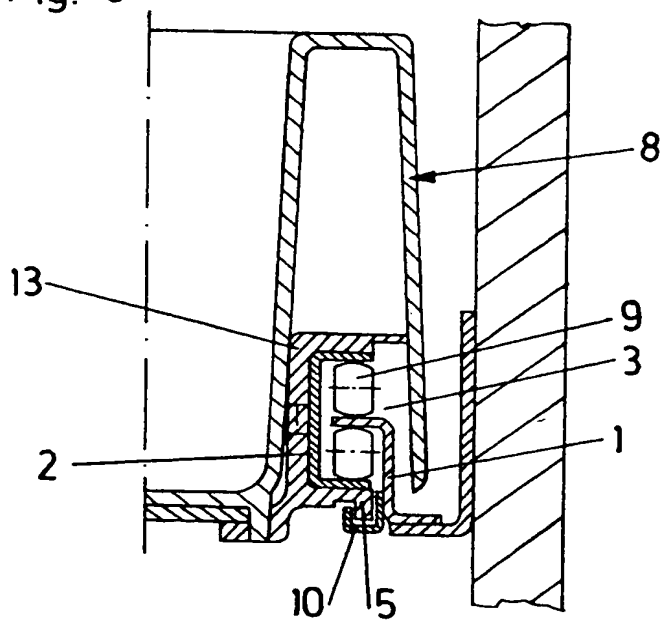


Fig. 6



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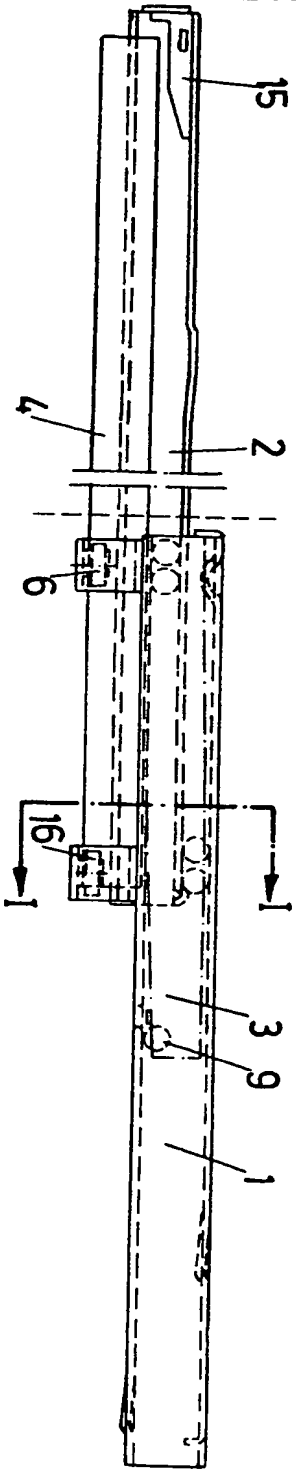

Fig.7

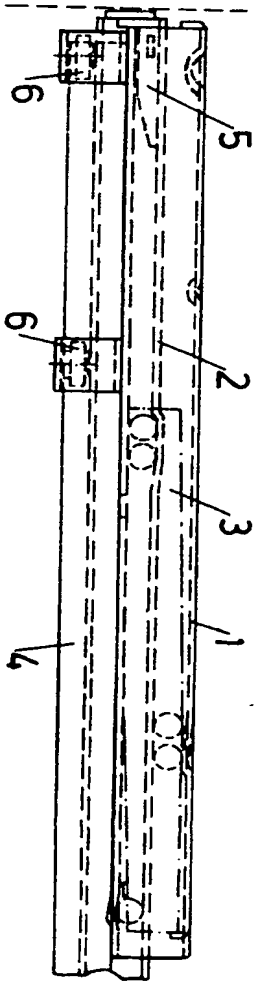

Fig.8

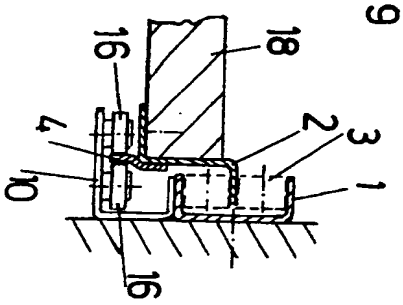

Fig.9

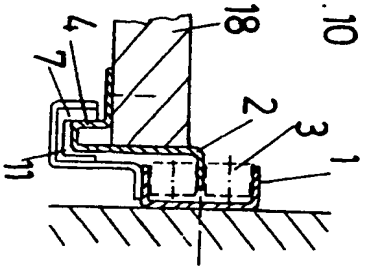

Fig.10

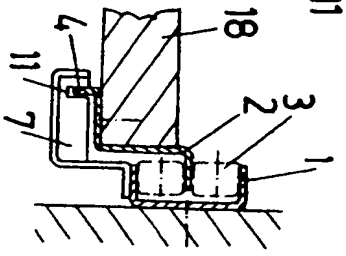

Fig.11

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Fig.12

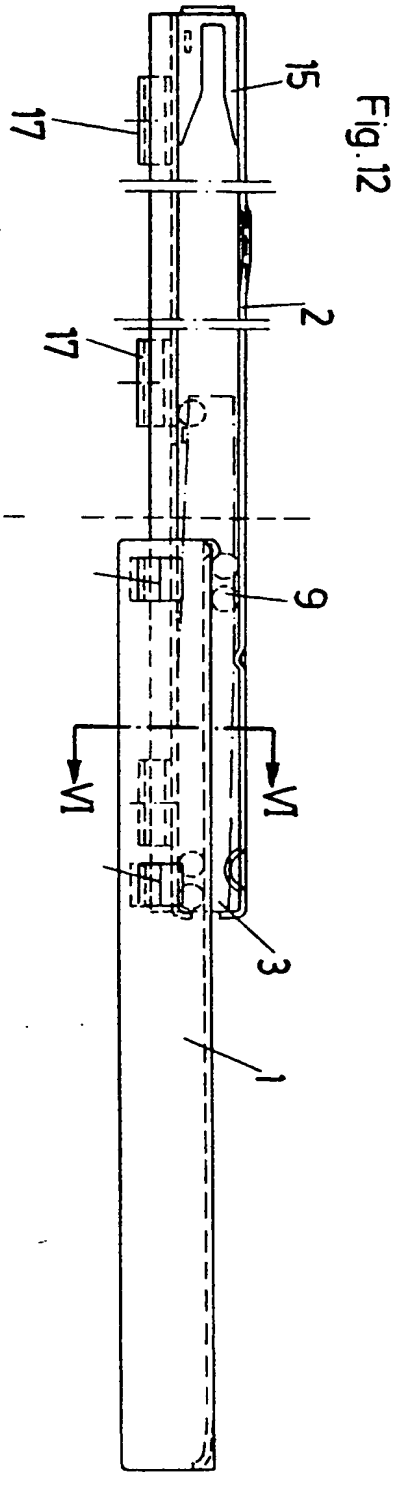


Fig.13

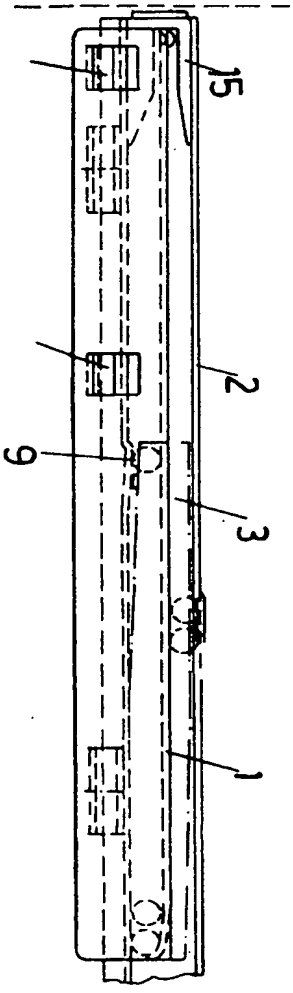
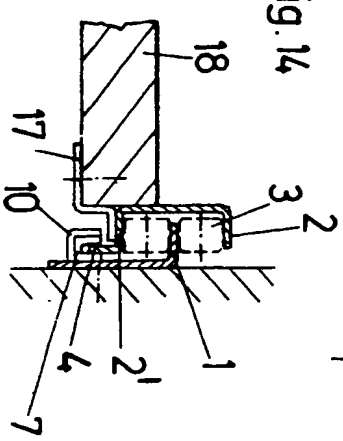


Fig.14



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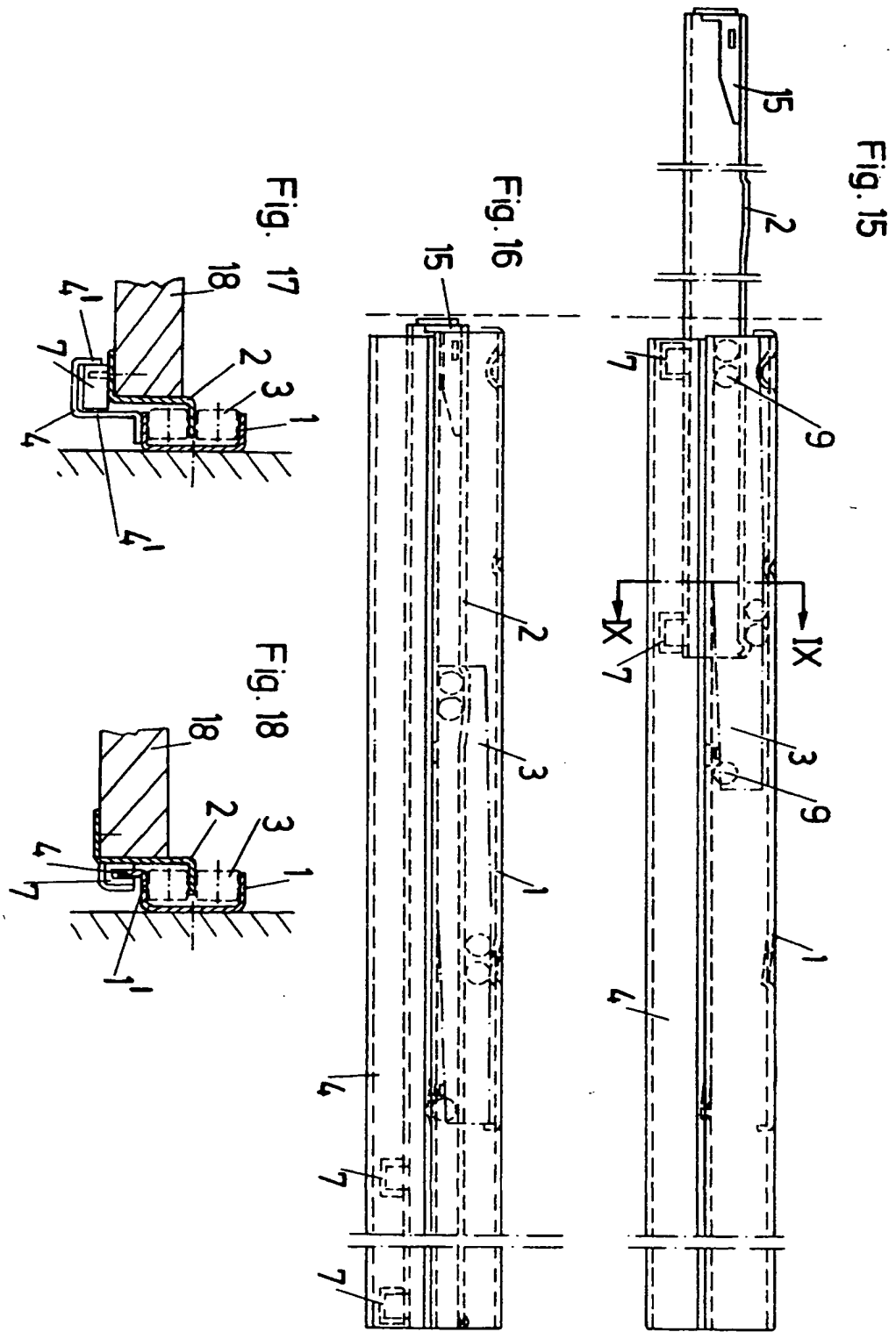

SPECIFICATION

Pull-out guide assembly

The invention relates to a pull-out guide assembly for drawers, shelves or the like, comprising on each side a support rail on the side of the body, a pull-out rail on the side of the drawer and load-transmitting runner rollers mounted in a runner carriage arranged between the rails, at least on one side of the drawer, the support rail having a U-profile over at least a portion of its length and a vertical guide for the drawer which projects from the lower horizontal flange.

Pull-out guide assemblies of the afore-mentioned kind permit smooth running of the drawer or shelve and are further able to take relatively heavy loads, the costs of manufacture of the runner carriage of injection-moulded plastics material and of the rollers arranged therein being low and the running characteristics being the same or better than with pull-out guide assemblies having ball bearing rollers fastened to their rails.

In pull-out guide assemblies of this kind it is not only important to provide smooth running of the drawer but also to support the drawer and the individual parts of the pull-out guide assembly with lateral stability. Thus, tilting of the drawer is avoided, and wobbling motions of the drawer during extraction and insertion do not occur.

It is the object of the invention to provide a pull-out guide assembly of the afore-mentioned kind in which satisfactory lateral stability is provided and, hence, particularly smooth running of the drawer is guaranteed.

In accordance with the invention, this is achieved in that the runner rollers of the runner carriage move on the support rail, while the lower vertical guide forms a lateral guide for the drawer by laterally abutting on a corresponding guide flange or guide element, e.g. a slide of the drawer or of the pull-out rail, which projects downwardly.

By means of the design in accordance with the invention, direct lateral guiding between the support rail and the pull-out rail or the support rail and the drawer itself is obtained, and not by the runner rollers or the runner carriage arranged in between. Lateral stability of the pull-out guide assembly is thus substantially improved.

Advantageously, a guide member is provided which is moulded to a holding member for the pull-out rail insertable into the side wall of the drawer and which projects into the profile of the support rail.

It is further advantageously provided that lateral guid elements, such as slides or rollers, guide th guide flange at two points staggered in the longitudinal direction of the rails.

A further embodiment of the invention provides that the guide flange is formed by a U-profile bent out of the rail.

A further embodiment of the invention provides that the guide flange is part of a groove having a U-profile, and that the guide elements, for example slides, fastened to the other rail extend into the groove.

Below different embodiments of the invention will be described in more detail with reference to the figures of the drawing in which

Figure 1 shows a side view of a pull-out guide assembly in accordance with the invention, with the drawer being in the pulled-out position,

Figure 2 shows the same view of a second embodiment of the invention,

Figures 3 to 6, each, show sections along line I-I of Fig.1 and Fig.2, respectively, different variants of the lateral guide being illustrated,

Figure 7 shows a side view of a further embodiment of a pullout guide assembly in accordance with the invention, the drawer being in the pulled-out position,

Figure 8 shows the same view, with the drawer being in the pushed-in position,

Figures 9 to 11, each, show sections along line I-I of Fig. 7, different variants of the lateral guide being illustrated,

Fig.12 shows a side view of a pull-out guide assembly of a further embodiment, the rails being in the pulled-out position,

Figure 13 shows a side view, with the drawer being in the pushed-in position,

Figure 14 shows a section along line VI-VI of Fig.12,

Figure 15 shows a side view of a pull-out guide assembly of a further embodiment, the drawer rail being partly extracted,

Figure 16 shows a side view of the same embodiment, the drawer rail being in the pushed-in position, and

Figures 17 and 18, each, show a section along line IX-IX of Fig.15 of two variants of the lateral guide.

Advantageously, the rails with the lateral guide according to the invention are provided only on one side of the drawer, while the rails on the other side of the drawer have no lateral guide means. Hence, tolerances in the body of the piece of furniture and during mounting of the pull-out guide assembly can be accepted because the rails can have a certain clearance with respect to one another on the side of the drawer which has no guide. Precise lateral guiding of the drawer is guaranteed nevertheless. In the following, referenc will be made to one side of the drawer or shelve only. comprises a support rail 1 on the side of the body, a pull-out rail 2 arranged at the drawer side wall, and a runn r carriage 3 arranged in between in which the load-transmitting runner rollers 9 are mounted. A leading element 15, preferably of plastics ma-

terial, is mounted at the front end of the pull-out rail 2 and guarantees exact vertical alignment, when the drawer is in the pushed-in position.

In the embodiments according to Figures 1 to 6, the support rail 1 has at least partly a J-shaped cross-section. In the embodiment according to Figures 3 and 4, said J-shaped cross-section extends over the full length of the drawer. At the upper horizontal flange 1', the runner carriage 3 runs by means of its runner rollers 9.

At its lower end, the support rail 1 is provided with a free vertical flange 1'' which guarantees lateral guiding of the drawer.

In the embodiments according to Figures 3 and 4, the drawer side walls are provided with continuous guide flanges 5. Said guide flanges 5 project into the profile of the support rail 1.

Lateral compensating rollers 12 having a vertical pivot axis are mounted in the runner carriage 3. Said compensating rollers 12 run on the one side, at the drawer or drawer side wall 8 and on the other side, at the center flange 1'' of the support rail 1.

In the embodiment according to Fig.4, a further guide flange 5' is provided at the drawer side wall 8 so that the free vertical flange 1'' of the support rail 1 is embraced by guide flanges 5,5' on both sides. In an embodiment of this kind, the compensating rollers 12 could also be omitted. It has proved, however, that due to the co-action of only one guide flange 5 with the compensating rollers 12, absolutely smooth guiding of the drawer together with satisfactory sliding characteristics are obtained.

In the embodiment according to Fig.6, an insertable holding member 13 is provided in the drawer side wall 8. Said holding member 13 receives, on the one side, the pull-out rail 2, and, on the other hand, the guide flanges 5 is moulded to said holding member, which is preferably of injection-moulded plastics material. A similar holding member 13' is used in the embodiment according to Fig.5.

In the embodiment according to Fig.5, the pull-out rail 2 is provided with the guide flange 4 which projects downwardly. The support rail 1 has supports 10 for the lateral guide elements.

In these embodiments, the guide elements are formed by slides 7 which have slots 11 into which the guide flange 4 of the pull-out rail 2 projects.

In the region of the supports 10, the support rail 1 has again a J-profile, although the support rail 1 is a composite member.

As can be seen from Fig.3, the pull-out rail 3 need not be a separate structural member. It may, for exampl , be provided as a groove in the drawer side wall 8. It is only required that it fulfils the function of a pull-out rail.

In the embodiments according to Figures 7 to 17, too, the pull-out rail 2 is provided with downwardly projecting guide flanges 4. The support rail 1 has supports 10 for the lateral guide elements.

In the embodiment according to Figures 7 to 9, the lateral guide elements are rollers 16 arranged on both sides of the guide flanges 4.

In the embodiment according to Figures 10 and 11, the guide elements are also formed by slides 7 which have slots 11 into which the guide flange 4 of the pull-out rail 2 projects.

In the embodiment according to Fig.10, the guide flange 4 of the pull-out rail is bent in the manner of a U-profile, thus increasing its lateral stability and being able to take up heavy lateral loads.

In the embodiments according to Figures 12 to 14, the pullout rail 2 is fastened to the shelve 18 by means of bent members 17. The guide flange 4 forms an angle with respect to the lower horizontal flange 2' of the pull-out rail 2 having a U-profile.

The support raul 2 is an L-profile and is at the vertical fastening flange provided with the support 10 for the slides 7.

In the embodiment according to Figs.15 to 18, a guide flange 4 is also provided at the support rail 1 on the side of the body. The support rail 1 on the side of the body is a U-profile which receives the runner carriage 3. In the embodiment according to Fig.18, the guide flange 4 of the support rail 1 is angled with respect to the lower horizontal flange 1'.

In the embodiment according to Fig.17, the guide flange 4 of the support rail 1 is a double flange 4', the flanges 4' being the lateral flanges of a U-shaped groove. In the illustrated embodiment, the groove is formed by a separate rail welded to the support rail 1 on the side of the body.

The other side of the pull-out guide has not been described.

The two sides may be equal or said other side can be made in accordance with the state of the art.

CLAIMS

1. A pull-out guide assembly for drawers, shelves or the like, comprising on each side a support rail on the side of the body, a pull-out rail on the side of the drawer and load-transmitting runner rollers mounted in a runner carriage arranged between said rails, at least on one side of the drawer, the support rails having a U-profile over at least a portion of their lengths and a vertical guide for the drawer projecting from the lower h rizontal flange, wherein said runner rollers f said runner carriage move on said support rail, while the lower vertical guide forms a lateral guide for the drawer by laterally abutting on a corr sponding downwardly projecting guide flange or guid element, .g. a slide of the drawer or of said pull-out rail.

2. A pull-out guide assembly as claimed in claim 1, characterized by a guide flange moulded directly to the drawer side wall and projecting into the profile of said support rail.

3. A pull-out guide assembly as claimed in claim 1, characterized by a guide member moulded to a holding member for said pull-out rail, said guide member being insertable into the drawer side wall and projecting into the profile of said support rail.

4. A pull-out guide assembly as claimed in claim 1, wherein lateral guide elements, such as slides or rollers, guide said guide flange at two points staggered in the longitudinal direction of said rails.

5. A pull-out guide assembly as claimed in claim 1, wherein said guide flange is formed by a U-profile bent of said rails.

6. A pull-out guide asembly as claimed in claim 1, wherein said guide flange is part of a groove having a U-profile, and wherein the guide elements, for example said slides, fastened to the other rail project into said groove.

7. A pull-out guide assembly substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.

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